

### REMARKS

Claims 1-11 and new claims 25-28, which depend from claim 1 are pending in the application. Support for new claims 25-26 can be found at least at the last paragraph bridging pages 14 and 15 of the specification and the first full paragraph on page 15 of the specification. Support for claims 27 and 28 can be found on page 7, lines 13-28 of the specification.

### Claim Rejections 35 U.S.C. § 103

Claims 1-11 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Fredriksen et al., United States Patent No. 6,312,650 ("Fredriksen"), in view of Speronello et al., U.S. Patent No. 5,516,497 ("Speronello"). It is alleged that Fredriksen discloses a system for purification of exhaust gases including NO<sub>x</sub> comprising purification catalyst monoliths placed one after the other including an SCR monolith, a monolith for the catalytic oxidation of hydrocarbons and CO and a monolith for the removal of soot particles. It is stated in the office action that "[i]t also would have been within the purview of an ordinarily skilled artisan to use the claimed order of oxidation, injection and SCR because Fredriksen discloses the order will only 'typically' be A followed by B and C (column 9, lines 59-60), which would obviously, to one of ordinary skill, suggest other orders including B followed by A and C." (Office Action, pages 2-3). Speronello is relied upon for the alleged teaching of 1.6 g/in<sup>3</sup> in a copper SCR catalyst and features recited in claims 2-9 and 11. This rejection is traversed.

First, applicants respectfully point out that claim 1 is directed to an emission treatment system comprising an oxidation catalyst; an injector in fluid communication with and downstream of the oxidation catalyst, wherein the injector periodically meters ammonia or an ammonia precursor into the exhaust stream; and a wall flow monolith in fluid communication with and downstream of the injector, wherein the wall flow monolith has a plurality of longitudinally extending passages formed by longitudinally extending walls bounding and defining said passages, wherein the passages comprise inlet passages having an open inlet end and a closed outlet end, and outlet passages having a closed inlet end and an open outlet end, wherein the wall flow monolith comprises an SCR catalyst composition that permeates the walls at a concentration of at

least 1.3 g/in<sup>3</sup>; wherein the wall flow monolith has a wall porosity of at least 50% with an average pore size of at least 5 microns. Neither Fredriksen nor Speronello teaches such an arrangement in which a wall flow monolith comprises an SCR catalyst composition that permeates the walls of the wall flow monolith.

The examiner has a positive, initial burden to prove unpatentability within 35 U.S.C. § 103. Conversely, applicants have no duty or presumption against patentability. The line of reasoning advanced by the examiner in the above passage quoted above from the Office Action appears to be a subtle form of prohibited hindsight, using applicants' disclosed and/or claimed invention against them. The examiner's rationale appears to be based upon the examiner's view of what the artisan would surmise or conclude without any further evidentiary basis to support the assertions and conclusions reached. The examiner's rationale cannot be a substitute for evidence to prove unpatentability. As noted in MPEP Section 2142, "the initial burden is on the examiner to provide some suggestion of the desirability of doing what the inventor has done." "To support the conclusion that the claimed invention is directed to obvious subject matter, either the references must expressly or impliedly suggest the claimed invention or the examiner must present a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the references." *Ex parte Clapp*, 227 USPQ 972, 973 (Bd. Pat. App. & Inter. 1985).

With the only basis in the office action for rearranging the order of the components in Fredriksen given as quoted above, applicants respectfully submit that the office action relies on prohibited speculation or unfounded assumptions to supply deficiencies in the factual basis of the rejections. *See In re Warner*, 379 F.2d 1011, 1017, 154 USPQ 173, 178 (CCPA 1967), *cert. denied*, 389 U.S. 1057 (1968), *reh'g denied*, 390 U.S. 1000 (1968). The Federal Circuit has made it clear in *In re Lee*, 277 F.3d 1338, 61 USPQ2d 1430 (Fed. Cir. 2002), and *In re Zurko*, 111 F.3d 887, 42 USPQ2d 1476 (Fed. Cir. 1997), that rejections must be supported by substantial evidence in the administrative record, and that where the record is lacking in evidence, rejections should not resort to unsupported speculation. As indicated in *Lee*, the examiner's finding of whether there is a teaching, motivation or suggestion to combine the teachings of the applied references must not be resolved based on "subjective belief and unknown authority," but must be

"based on objective evidence of record." 277 F.3d at 1343-44, 61 USPQ2d at 1433-34. Because the office action fails to meet this standard, the rejection should be withdrawn.

Furthermore, applicants' claimed invention is directed to not only an order of components, but an arrangement in which a wall flow monolith comprises an SCR catalyst composition that permeates the walls of the wall flow monolith. The office action ignores the explicit teaching of Fredriksen that the monoliths shown in Figs. 1-10 of Fredriksen consist up to three types of purification elements, placed one after another, each monolith performing one of three purification processes. (Fredriksen, col. 9, lines 48-60). Fredriksen explicitly teaches that a separate monolith performs one of the functions of SCR, catalytic oxidation of hydrocarbons and CO and removal of soot particles. There is no teaching or suggestion in Fredriksen to combine the functions of SCR and soot removal into a single monolith as claimed by applicants. Speronello fails to cure this deficiency in Fredriksen. Speronello merely relates to a particular type of zeolite catalyst composition, not the system as claimed by applicants.

Applicants' specification discusses benefits of incorporating the SCR catalyst and a particulate filter on pages 8 and 9 of the specification. According to embodiments of the present invention, high filtration efficiency can be achieved by the arrangement of components recited in claims 1-11. In addition, practical levels of SCR catalysts can be loaded into the filter without causing excessive back pressure across the article. None of these features or benefits are recognized in Fredriksen or Speronello. Accordingly, withdrawal of the rejection is respectfully requested.

#### Double Patenting Rejections

Claims 1-14 stand rejected for obviousness-type double patenting over each of U.S. Patent No. 6,826,906; U.S. Application Serial No. 10/925,018; and U.S. Application Serial No. 10/858,656. Applicants presume that rejection of claims 1-11, not claims 1-14 was intended, since only claims 1-11 are presently pending. Each of these rejections is respectfully traversed.

MPEP Section 804 states that "[a] double patenting rejection of the obviousness-type is 'analogous to [a failure to meet] the nonobviousness requirement of 35 U.S.C. 103' except that the patent principally underlying the double patenting rejection is not

considered prior art. *In re Braithwaite*, 379 F.2d 594, 154 USPQ 29 (CCPA 1967)." Furthermore, Section 804 of the MPEP requires that "any analysis employed in an obviousness-type double patenting rejection parallels the guidelines for analysis of a 35 U.S.C. 103 obviousness determination. *In re Braat*, 937 F.2d 589, 19 USPQ2d 1289 (Fed. Cir. 1991); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985)."

As discussed further below, applicants respectfully submit that in each of the obviousness-type double patenting rejections, the examiner has failed to establish a prima facie case of obviousness-type double patenting.

U.S. Patent No. 6,826,906

Claims 1-11 stand rejected over claims 1-5 of U.S. Patent no. 6,826,906. Claim 1 of U.S. Patent no. 6,826,906 recites:

1. An emission purification system for treating exhaust gases produced by a vehicle powered by a diesel engine comprising: a) a catalyzed soot filter adjacent and in direct fluid communication with said engine without intervening catalysts therebetween, said soot filter of the wall-flow type having gas permeable walls formed into a plurality of axially extending channels, each channel having one end plugged with any pair of adjacent channels plugged at opposite ends thereof, said exhaust gases passing through said channel walls as said gases travel from an entrance to an exit of said soot filter; b) a valve downstream of said soot filter's exit in fluid communication with a nitrogen reductant and with said exhaust gases after exiting said soot filter; c) means for regulating said valve to control the quantity of said nitrogen reductant admitted to said exhaust gases; and, d) a nitrogen reductant SCR catalyst downstream of said valve and said soot filter in direct fluid communication with said soot filter, said SCR catalyst having a set temperature at which said SCR catalyst becomes catalytically active for a set space velocity if said exhaust gases pass through said SCR catalyst with a set quantity of reductant immediately upon exit from said engine that is higher than the temperature at which said SCR catalyst becomes catalytically active when said exhaust gases pass through said SCR catalyst at said

set space velocity with said set quantity of reductant after passing through said soot filter.

First, it should be noted that claim 1 requires "a catalyzed soot filter **adjacent and in direct fluid communication with said engine without intervening catalysts therebetween.**" On the other hand, claims 1-11 of the instant patent application are directed to a system in which there is an oxidation catalyst, an injector downstream from the oxidation catalyst, and a wall flow monolith downstream of the injector. No reasoning is provided in the rejection as to how one of skill in the art would arrange the order of components recited in claim 1 of U.S. Patent no. 6,826,906 to provide the ordering of components recited in claim 1 of the instant application. Further, as noted above, claim 1 of the instant application requires that the wall flow monolith comprises an SCR catalyst composition that permeates the walls of the wall flow monolith. There is absolutely no teaching or suggestion of this structure in claim 1 of U.S. Patent no. 6,826,906, and no reasoning is set forth in the office action as to why the skilled artisan would modify claim 1 as in applicants' claimed structure. Withdrawal of the rejection is respectfully requested.

U.S. Application Serial No. 10/925,018

Claims 1-11 stand provisionally rejected over claims 1-17 of copending application serial no. 10/925,018. Claims 1 and 16 are the independent claims of claims 1-17 in application serial no. 10/925,018, which recite:

1. An emissions treatment system, comprising: a) an injector for periodically metering ammonia or an ammonia precursor into an exhaust stream; b) a first substrate comprising a first SCR catalyst composition, downstream of the injector; wherein the first substrate has an inlet end, an outlet end, a length extending between the inlet end to the outlet end, wall elements and a plurality of passages defined by the wall elements; wherein the first SCR catalyst composition is disposed on the wall elements from the inlet end toward the outlet end to a length that is less than the substrate's axial length to form an inlet zone; an  $\text{NH}_3$  destruction catalyst composition comprising a platinum group metal component dispersed on a refractory metal oxide, wherein the  $\text{NH}_3$  destruction catalyst

composition is disposed on the wall elements from the outlet end toward the inlet end to a length that is less than the substrate's axial length to form an outlet zone; and wherein there is from 0.1 to 10 g/ft<sup>3</sup> of platinum group metal component in the outlet zone.

16. An emissions treatment system, comprising: a) an injector for periodically metering ammonia or an ammonia precursor into an exhaust stream; b) a first substrate comprising a first SCR catalyst composition, downstream of the injector; wherein the first substrate has an inlet end, an outlet end, a length extending between the inlet end to the outlet end, wall elements and a plurality of passages defined by the wall elements; wherein the first SCR catalyst composition is disposed on the wall elements from the inlet end toward the outlet end to a length that is less than the substrate's axial length to form an inlet zone; an NH<sub>3</sub> destruction catalyst composition comprising a platinum component dispersed on a refractory metal oxide, wherein the NH<sub>3</sub> destruction catalyst composition is disposed on the wall elements from the outlet end toward the inlet end to a length that is less than the substrate's axial length to form an outlet zone; and wherein there is from 0.1 to 10 g/ft<sup>3</sup> of platinum component in the outlet zone.

In making the rejection, the office action concludes that the claims are not patentably distinct from each other because it would have been obvious "to include an oxidation catalyst because the '018 application claims an ammonia destruction catalyst comprising a platinum group metal on a refractory metal oxide." This rejection is traversed. It is clear from reading claim 1 of the '018 application that claims 1 and 16 require a system that incorporates an SCR catalyst and an NH<sub>3</sub> destruction catalyst on a single substrate. No reasons are provided as to how one of ordinary skill in the art would modify the substrate recited in claims 1 and 16 of the '018 application by removing the NH<sub>3</sub> destruction catalyst of the substrate that incorporates the SCR on the inlet end of the substrate and to provide a system in which an oxidation catalyst upstream of the wall flow filter as recited in applicants' claims 1-11. Applicants respectfully submit that proceeding as suggested in the office action would destroy the intended function of the first substrate recited in claims 1-17 of the '018 application, which is to destroy the excess ammonia that emerges from the inlet zone of the catalyst. In addition, none of claims 1-

17 of the '018 application recites an oxidation catalyst upstream of the first substrate. The only suggestion of such an arrangement comes from applicants' specification. Withdrawal of the rejection is respectfully requested.

U.S. Application Serial No. 10/858,656

Claims 1-11 stand provisionally rejected over claims 1-40 of copending Application No. 10/858,656. Applicants respectfully point out that claims 1, 4-9, 11-20, 22-30, 32-37, and 41-42 are currently pending in Application Serial no. 10/858,656. For the Examiner's convenience and ease of reference, a copy of the claims presently pending in 10/858,656 is attached to this Amendment. Claim 1 of Application Serial no.10/858,656, which is the sole independent claim in the application, recites:

1. An apparatus comprising:
  - a diesel engine having an exhaust outlet in communication with an exhaust pipe along an exhaust conduit;
  - a catalyzed filter in communication with the exhaust outlet, the catalyzed filter comprising a first catalyst comprising a first catalyst composition which comprises:
    - a first platinum group metal; and
    - a first cerium component; and
    - a second catalyst in communication with the first catalyst, at least a portion of the second catalyst located at a separate location along the exhaust conduit selected from the group consisting of between the engine exhaust outlet and the first catalyst, and between the first catalyst and the exhaust pipe, the second catalyst comprising a second catalyst composition which comprises:
      - a second cerium component.

In rejecting claims 1-11 of the instant application over the claims of Application Serial No. 10/858,656, the Office Action states that the claims are not patentably distinct from one another because "the '656 application claims platinum group components in an amount of 0.1-200, 01.-5 and 0.1-0.5 g/ft<sup>3</sup> in claims 26-29 and it would have been

obvious to one of ordinary skill in the art to inject ammonia because the '656 patent [application] claims a first diesel engine exhaust inlet, which would obviously, to one of ordinary skill, suggest an ammonia injection to reduce the claimed diesel engine exhaust." The rejection in the office action fails to recognize key differences between applicants' claims 1-11 and the claims pending in the '856 application. First, the claims in the '856 patent application require a first catalyst including a cerium component and a second catalyst including a cerium component. Furthermore, no pending claim in the '656 patent application recites the structure recited in claims 1-11 of the instant patent application, namely an arrangement in which there is an oxidation catalyst, an injector and a wall flow monolith having inlet passages with an open inlet end and a closed outlet end and outlet passages with a closed inlet end and open outlet end in which the monolith comprises an SCR catalyst composition that permeates the walls of the wall flow monolith. The rejection in the office action ignores these structural limitations in applicants' claims and fails to provide reasoning as to why the skilled artisan would modify the claimed invention in the '656 application, which does not include an oxidation catalyst, an injector or an SCR catalyst composition on the wall flow monolith as recited in claims 1-11 of the instant application. Withdrawal of the rejection is respectfully requested.

The undersigned has been authorized by Richard A. Negin, Reg. No. 28,649, an attorney of record in the subject application, to prepare and file this Amendment on behalf of the Assignee. Correspondence should be directed to Chief Patent Counsel, BASF Catalysts LLC, 101 Wood Avenue, P.O. Box 770, Iselin, NJ, 08830-0770.



Reconsideration of the above-referenced patent application in view of the foregoing amendment is respectfully requested. It is not believed that any fees are due. However, if any fees are due, however, the USPTO is authorized to charge Deposit Account No. 50-3329.

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